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APPENDICES

LIST OF ACRONYMS

AMAFCA ..... Albuquerque Arroyo Flood Control Authority
BC ..... Bernalillo County
BMP ..... Best Management Practice
CSWCD ..... Ciudad Soil and Water Conservation District
CD ..... Compact Disc
COA ..... City of Albuquerque
DMD ..... Department of Municipal Development, City of Albuquerque
DNA ..... Deoxyribonucleic Acid
DPM ..... Design Process Manual
DRB ..... Design Review Board
DRC ..... Design Review Committee
EHD ..... Environmental Health Department, City of Albuquerque
EPA ..... Environmental Protection Agency
*e*NOI ..... electronic Notice of Intent
FIFRA ..... Federal Insecticide, Fungicide, and Rodenticide Act
GI ..... Green Infrastructure (Sustainable Development)
GIS ..... Geographical Information System
HAZMAT ..... Hazardous Material
LID ..... Low Impact Development
MRGSQT ..... Middle Rio Grande Stormwater Quality Team
MS4 ..... Municipal Separate Storm Sewer System
NMDA ..... New Mexico Department of Agriculture
NMDOT ..... New Mexico Department of Transportation
NMED ..... New Mexico Environment Department
NPDES ..... National Pollutant Discharge Elimination System
O&M ..... Operation and Maintenance
OSHA ..... Occupational Safety and Health Administration
PHF ..... Pesticides, Herbicides and Fertilizer
SMD ..... Storm Maintenance Division, Department of Municipal Development
PVC ..... Polyvinyl Chloride Pipe
SMS ..... Stormwater Management Section, Engineering Division, DMD
SSCAFCA ..... Southern Sandoval County Flood Control Authority
SWMD ..... Solid Waste Management Department, City of Albuquerque
SWMP ..... Stormwater Management Program
SWPPP ..... Stormwater Pollution Prevention Plan
SWQB ..... Surface Water Quality Bureau of the NMED

TMDL..... Total Maximum Daily Load

TV..... Television

UNM..... University of New Mexico

USGS..... United States Geological Service

WUA.....Albuquerque Bernalillo County Water Utility Authority (This authority has acquired the responsibility of the water distribution and sewer collection and treatment operations previously held by the Water Utility Department of the City of Albuquerque)

YDI..... Youth Development Inc.

SECTION 1. PROGRAM OVERVIEW

The Albuquerque Municipal Separate Storm Sewer System (MS4) is operated by four separate entities, the City of Albuquerque (COA), Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), the University of New Mexico (UNM) and the New Mexico Department of Transportation (NMDOT). Each of these co-permittees has a unique role in the management of stormwater. NMDOT and UNM have separate Stormwater Management Programs (SWMP). COA and AMAFCA's system similarities caused those two agencies to join together in this, single SWMP. [Note: When the renewed MS4 permit is issued by EPA in 2012, AMAFCA and COA will have separate SWMPs to better define the individual responsibilities of each agency.]

The SWMP for the COA and AMAFCA is a comprehensive program comprised of various program elements and activities designed to reduce stormwater pollution to the maximum extent practicable and eliminate prohibited non-stormwater discharges in accordance with federal and state laws and regulations.

These laws and regulations are implemented through National Pollutant Discharge Elimination System (NPDES) municipal stormwater discharge permits. In December, 2003, the Albuquerque MS4 was granted a permit from Region 6 of the Environmental Protection Agency (EPA) to discharge stormwater into the Rio Grande. As a requisite of this MS4 permit, the COA and AMAFCA are responsible to meet minimum program elements of the permit and to also conduct specific activities to address local urban stormwater runoff water quality concerns. The core program elements address:

- Structural Controls and Stormwater Collection System Operation
- Areas of New Development and Significant Redevelopment
- Roadways
- Flood Control Projects
- Pesticide, Herbicide and Fertilizer Application
- Illicit Discharges and Improper Disposal
- Spill Prevention and Response
- Industrial and High Risk Runoff
- Construction Site Runoff
- Public Education
- Monitoring Programs
- E Coli Total Maximum Daily Load (as of January of 2011)

The COA and AMAFCA recognize the importance of effective stormwater management and have allocated resources to administer and implement the program. Management and administration of the SWMP for the COA is provided by the Stormwater Management Section (SMS) of the Department of Municipal Development (DMD), while AMAFCA's MS4 responsibilities are managed by their Executive Engineer. Since the COA Storm Maintenance Division (SMD) and AMAFCA are also responsible for the Operation and Maintenance (O&M) of the stormwater conveyance system, a close working relationship exists between the Stormwater Management Section and these other identities.

1.1. STRUCTURAL AND SOURCE CONTROL MEASURES TO CONTROL POLLUTANTS FROM COMMERCIAL AND RESIDENTIAL AREAS

1.1.1. MAINTENANCE ACTIVITIES AND MAINTENANCE SCHEDULES FOR STRUCTURAL CONTROLS

The Albuquerque-area storm drainage system consists of underground storm pipes and inlets, lined and unlined open channels, natural arroyos, pump stations, detention basins, stormwater quality features and flood control dams. These system components are maintained by the Storm Maintenance Division and AMAFCA respectively on a continual basis throughout the year. System maps are available online that show each agency's element responsibilities.

Maintenance activities include cleaning storm sewers, stormwater quality features, inlets, and manholes, sediment and floatables removal from channels and detention basins, cleaning of pump station bar screens and mowing of vegetation along channels and detention basins. Maintenance activities also include repair of concrete channel linings, channel joint repair, pipe replacement, and repair of damage caused by erosion during major storm events.

AMAFCA maintenance activities are primarily associated with the maintenance of lined and unlined channels, debris removal facilities and major detention basins. Maintenance activities include vegetation control by mowing and sediment and floatable removal from both channels and detention basins. Maintenance activities also include repair of structural and erosion problems as they occur.

Appendix A shows the type, location, maintenance and other pertinent data for major stormwater infrastructure operated by the COA and AMAFCA.

Inspections

System inspections for both agencies are on-going but no less than annually. Maintenance activities are generally assigned based upon results of field inspections of existing systems. The COA and AMAFCA give particular priority to inspections of all existing systems prior to the primary rainfall season, which typically occurs in the months of July, August and September. These are priority inspections to ensure that systems are functioning in a manner to prevent accidental flood damage and release of floatables due to plugged or inoperative systems and structural damage that may cause failure.

As new systems are constructed, inspections are provided by both agencies for assurance of quality control on the constructed installations. New installations are only accepted into the agency maintenance system after inspections have been completed to assure the facility is installed in accordance with the agency specifications and maintenance needs.

Inspections are also conducted after every major rainfall event and in response to citizen concerns. Following these inspections, corrective measures are addressed by the respective agency as needed.

Floatables

Floatables in the storm sewer system consist primarily of plastic and paper products, aluminum cans, tumbleweeds, leaves and general woody type debris and general construction debris. Floatable accumulations in open channels are periodically removed during normal maintenance activities. All removed floatables are disposed at authorized landfills through existing COA Solid Waste Disposal Programs.

Floatable debris associated with the storm drainage system is controlled by the following structural improvements:

- Inlet Grates

- Pump Station Bar Screens
- Outlet Structure Control Mechanisms For Detention Basins And Flood Control Dams (Ported Risers)
- Special Water Quality Control Structures

Debris accumulations are removed on an as needed basis and when scheduled maintenance activities are conducted on these facilities. See further discussions in Sections 2.1.4 and 2.2.6 of this document.

Minor Detention Basins

In general, minor detention basins on private property are associated with private development, and are maintained by the development owner or Homeowners Association. These facilities are part of the original drainage approval for the development, and are required to be maintained in operating condition in accordance with the original plan approval. These facilities are not routinely inspected by the COA, however they are inspected as problems occur or as complaints are received from the public regarding the facility. The City is in the process of developing specific regulations of these private ponds in a new Storm Drainage Ordinance expected to reach City Council in 2012 or 2013.

Measurable Goals

1. Maintain computerized maintenance schedules for O&M for all major stormwater infrastructure operated by COA and AMAFCA. Schedules include yearly estimate of the amount of trash/debris removed at each facility and expanded O&M schedules to target quarterly infrastructure maintenance.

1.1.2. PLANNING PROCEDURES TO DEVELOP, IMPLEMENT AND ENFORCE CONTROLS TO REDUCE POLLUTANTS FOR NEW DEVELOPMENT AND REDEVELOPMENT PROJECTS

The COA and AMAFCA have historically engaged in drainage planning studies to guide and direct their respective Capital Improvement Program (CIP) for planning and construction of flood drainage facilities. The program has historically addressed:

a. Adequacy of existing facilities,

b. Capacity of existing facilities to accommodate future (fully developed) land use conditions, and

c. Provide adequate flood protection for the 100-year flood storm.

All Flood Control studies and Master Plans now include consideration and analysis of stormwater quality. The consideration of sediment transport and the reduction of sediment load in the arroyos and channels is an important function of the Master Planning Process for much of the Albuquerque Storm Drainage System, since the bulking factor can affect the overall capacity of the system and the ability to handle desired flood frequency. Floatables control is also considered an integral design element in each flood control Master Plan. Starting in 2011, Low Impact Development opportunities also became a part of reviews of private developments and city-sponsored projects. The City attempts to build new facilities to LEED Silver requirements which include site improvements designed to reduce storm runoff.

The consideration of reduction of sediment load has resulted in a wide variety of detention basins throughout the Albuquerque MS4 system. As of January of 2012, the number of detention basins and minor (non-jurisdictional dams) is 105. This reduction in sediment has resulted in downstream quality improvements since much of the pollutant load involved in urban waters is sediment related.

Both COA and AMAFCA are involved in a Development Review Process to review and approve Site Drainage Plans for all developments in the Albuquerque area. The following are the Development Review Processes that currently exist to provide plan review and enforcement of the Drainage Ordinance:

a. The Development Review Board (DRB) provides high level, zoning and development review for all private developments in the Albuquerque area.

b. Design Review Committee (DRC) provides detailed plan review for all public and private development projects including hydrology and hydraulics review and approval of any new drainage system additions related to the development.

c. Drainage plan review and approval - All site development and redevelopment projects are required to submit drainage plans to the Hydrology Section of the Planning Department. Plans are reviewed for compliance with COA and AMAFCA drainage regulations and the COA Development Process Manual (DPM). If the project involves drainage directly to an AMAFCA facility, staff from AMAFCA is invited to participate in the review and make comments. All development projects that will require construction areas exceeding one acre in size are advised in writing that Storm Water Pollution Protection Plans will have to be prepared and implemented for these projects.

d. Inspection – Depending on the project, either the COA Construction Division, Drainage Development Section of the Planning Department or the DMD Stormwater Management Section will provide on-site inspection for the installation of new facilities to ensure compliance with approved plans and specifications. AMAFCA staff performs similar inspection for AMAFCA facilities.

e. As part of the Drainage Plan approval, as outlined in the COA DPM, development projects are required to include, erosion and sediment control plans for control of water borne and wind blown sediment during construction and to assure site restoration after construction. The erosion and sediment control on-site inspection is provided by both the Drainage Development Section of the Planning Department and the Environmental Health Department (EHD), through the provisions of the Site Disturbance Permit as issued by the EHD. Site Disturbance (Fugitive Dust) Permits require site restoration to prevent erosion after development projects are complete. These controls are primarily in the form of revegetation of disturbed areas, as well as common silt fences and temporary detention ponds.

In an effort to develop guidelines for stormwater quality considerations in Areas of New Development and Significant Redevelopment, a Stormwater Quality Subcommittee of the DPM Technical Review Committee prepared draft changes to the City's Storm Drainage Ordinance. Further completion of this effort is pending the EPA's approval of a renewed MS4 Permit. Once the new Storm Drainage Ordinance is approved by the City Council, the Stormwater Quality Subcommittee will develop appropriate changes to the COA DPM.

Measurable Goals

1. Pending certification by EPA of the renewed MS4 Permit, request Council approval of changes to the Storm Drainage Ordinance and complete updates to the COA DPM.

1.1.3. PRACTICES FOR OPERATING PUBLIC STREETS, ROADS AND HIGHWAYS

Street maintenance activities are conducted only by the COA. AMAFCA performs no street maintenance activities.

Typical street maintenance activities include road repair and maintenance, unpaved road grading, curb gutter and sidewalk repair, major street repaving and seal coating, bridge maintenance, winter de-icing, street sweeping, and vegetation control.

Road repair activities conducted by COA crews are generally restricted to pothole patching and patching for utility excavation work. These activities are closely coordinated with the DMD Street Maintenance Division and other utility departments to assure that timely repairs are made to the roadway surface. Also included in general road repair is lane striping for traffic control purposes, as well as traffic signal maintenance. Generally, paving, stripping, and signal repair operations do not impact stormwater quality since they are scheduled to be conducted at times when rainfall is not likely to occur.

De-icing Activities

The DMD Street Maintenance Division currently operates a de-icing program for the winter season traffic safety. Procedures primarily exist to protect public safety, allow for the free operation of police and fire equipment, provide public access to critical facilities such as hospitals and reduce the risk of accidents. De-icing activities are concentrated on arterial and collector streets, and bridges. Following a period of de-icing activity, street sweeping efforts are concentrated on arterial and collector streets that have received de-icing applications. During those periods, sweeping on residential streets is discontinued until arterial/collector streets are cleaned. All City staff are trained in the proper use of de-icing equipment and informed of the stormwater quality issues related to this activity.

Presently, all four street maintenance yards include facilities for covered storage for all winter de-icing material.

Due to low snowfall in this arid environment, pollution related to de-icing is not considered a priority threat to the Rio Grande. Funds are being set aside in 2012 to investigate any direct effects to the river from de-icing activities and to ensure that COA procedures and policies are in line with stormwater quality protection to the Maximum Extent Practicable.

Street Sweeping

The COA currently operates fifteen street sweeper units. Residential and arterial streets are swept a minimum of three times a year, with any bike lane streets being swept an additional two times a year. The Downtown and Old Town areas of Albuquerque, which are high trash producers and also high visibility areas, are swept once a week. Another high problem area adjacent to the major concrete and asphalt production areas are swept once every two weeks.

The Downtown Action Team, a privately funded business organization, operates a staff of manual street cleaners and a mini-street sweeper operating daily in the immediate downtown area surrounding City Hall. This group has received recognition from the Mayor for reducing litter in the downtown area.

Vegetation Maintenance

Vegetation maintenance for the Right-of-Ways in the COA is managed by the Weed and Litter Division of the Street Maintenance Department. Current activities include mowing of roadside vegetation and removal of illegal dumping in areas along street Right-of-Ways. Vegetation maintenance is currently performed on an as needed basis and is dependent on the timing and amount of rainfall.

The Weed and Litter Division applies herbicides to control vegetation in the roadway areas and adjacent Right-of-Way areas. The Department has licensed applicators trained for application of herbicide material. The primary herbicide used in roadway applications is Roundup, or Rodeo, depending upon the area of application of the material. All storage, handling and application of herbicides comply with policies and regulations of the New Mexico Department of Agriculture (NMDA). The NMDA also provides periodic, unscheduled inspections to ensure compliance with regulations.

Roadway Debris Control

The COA SMD Weed and Litter Division operates several programs to control excessive debris accumulations in the roadway areas and to control unwanted vegetation. The Weed and Litter Division operates two programs for the collection of roadside debris;

a. The Community Service Worker's Program utilizes community service workers to collect roadside debris in plastic bags and operates seven days a week. Weekday operations are conducted utilizing eight to nine community service workers for an eight hour day schedule. Weekend operations involve approximately twenty-five to thirty community service workers working eight-hour day schedule. Roadside debris is collected into plastic bags and temporarily stored along the roadside. The bags are then collected in trucks and hauled to the nearest Solid Waste Convenience Collection Center. Community service workers are also utilized to eliminate unwanted vegetation. Weeds are cut and stacked and periodically hauled to the Solid Waste Convenience Centers. This program is utilized for vegetation control in public rights-of way, in public roadways, as well as public drainage easements, and some open space areas.

b. The Weed and Litter Division also uses inmates from the Bernalillo County Detention Center to collect debris along roadsides, drainage areas, and some open space areas. This program is operated five days a week and involves approximately thirty men per day. Collected debris is placed into plastic bags and periodically hauled to the Solid Waste Convenience Center. This program is also utilized to control vegetation similar to the Community Service Program.

c. The COA Weed and Litter Division has employees that are more involved in some of the maintenance programs utilizing heavier equipment. The department has twelve full time people, and operates six tractor mowers during the spring, summer and fall seasons in the roadside and right-of-way vegetation control. The Division also participates in special neighborhood clean-up efforts. Manpower is made available to assist the neighborhoods in the clean-up effort and the Department offers free pickup for the material collected in the neighborhood clean-up program. Also in cooperation with the SWMD, Weed and Litter Division operates a once a year free pickup of green yard waste material from tree trimmings, grass clippings, etc. At the present time, this is offered once a year, and is concentrated during the months when tree trimming and pruning is most common. The yard waste material collected is delivered to the composting facility operated by the Wastewater Utility Division. This material is chipped, composted, bagged, and sold as a retail available gardening product by a contract operator.

Measurable Goals

1. Continue to evaluate alternative de-icing materials and placement techniques that provide for public safety while minimizing impacts to stormwater quality.

2. By end of 2012, prepare Plans, Specifications & Estimates to control pollution in stormwater runoff in COA equipment/vehicle maintenance yards and maintenance center operations. Construct Green Infrastructure and Low Impact Development retrofit of this area.

3. Consider, within budget restrictions, increasing the frequency of the COA street sweeping program taking into account leaf litter and de-icing operations and proximity to arroyos, channels and the Rio Grande.

1.1.4. PROCEDURES TO ENSURE THAT FLOOD MANAGEMENT PROJECTS ASSESS IMPACTS ON WATER QUALITY

Flood Control projects are accomplished by both the COA and AMAFCA. Flood control facilities are generally channel improvements and major detention basins and flood control dams. These facilities are generally constructed as part of City or AMAFCA-sponsored Capital Improvement Programs for the design and construction of new facilities financed through municipal bonds.

Since most of the flood control facilities involve the construction of detention basins and detention dams, the facilities act as sediment and floatable traps for downstream systems and receiving streams. Primary spillway structures on detention basins and flood control dams are generally designed with grates on the outlet structure to control debris accumulation in downstream systems and to facilitate removals.

Since 2000, the COA and AMAFCA have included water quality controls on all proposed flood control projects, and to evaluate and modify, as needed, existing infrastructure to enhance storm runoff quality. These improvements have included the modification of existing dam outlet structures to prohibit the passage of floatables, installation of modified trash racks to increase the effectiveness of floatables removal, and the addition of floatable removal systems to existing infrastructure.

In 2004, the Albuquerque MS4 Co-Permittees and Bernalillo County contracted an engineering study to evaluate the sources and BMP alternatives to control gross pollutants, including floatables, in the Albuquerque Metro Area. Results of this completed study are being used to prioritize target areas for gross pollutant control BMPs and to also target areas of concern for public education.

Measurable Goals

1. Within budget constraints, continue with the installation and implementation of BMPs and retrofit structures to control floatables and trash, based on evaluations in the above mentioned study.
2. Install permanent BMPs to control the discharge of floatables and trash from the North Diversion Channel to the Maximum Extent Practicable.
3. By the end of 2012, design cost effective outlet structures, called ported risers, on four to five existing detention basins using the Floatables Study. Consider these designs as templates for a program of retrofits of all 105 detention basins in the City system. AMAFCA will sponsor a similar effort on the minor dams within its jurisdiction.

1.1.5. PROGRAM TO MONITOR POLLUTANTS IN RUNOFF FROM OPERATING OR CLOSED MUNICIPAL LANDFILLS AND FACILITIES FOR HANDLING OF MUNICIPAL WASTES

Presently, there are no landfill facilities within the Albuquerque City limits (MS4 watershed) that accept municipal waste material. The COA operates a Municipal Landfill for all Solid Waste deposits that is located approximately eighteen miles west of the COA and in the Rio Puerco watershed. All Solid Waste facilities in the City are managed and operated under the following regulations:

a. The New Mexico State Solid Waste Management Regulations, October 1995. These regulations are administered by the New Mexico Environment Department Solid Waste Bureau.

b. The COA EHD, Environmental Services Division. This City agency manages programs associated with any closed or non-operating landfill within the Albuquerque area.

The COA operates three Municipal Waste Collection and Transfer facilities. These facilities are operated by the SWMD, which is responsible for the collection and disposal of municipal solid waste. When these

facilities were constructed, they were required to be reviewed by the DRC and comply with all City drainage standards and requirements. Stormwater pollution prevention at these Waste Transfer Stations is covered in Section 3.4.1. In addition, under Good Housekeeping for Municipal Operations, these facilities must have a operational SWPPP, a contact person responsible for stormwater quality and provide annual reports to the SMS for submittal to EPA. All three transfer stations operate under a roof which minimizes contamination of rainfall runoff from the site.

There are approximately nine (9) closed landfills in the COA. All of these closed landfills have been capped with earth and stormwater diversion systems have been installed to prevent infiltration of stormwater into the landfill contents. There is presently no plan or requirements to perform surface water monitoring at closed landfills or waste transfer stations. However, ground water and methane monitoring devices have been installed at targeted closed landfills, and is regularly monitored by the EHD. A goal of the COA EHD is to provide groundwater and methane monitoring for all prior non-operating municipal landfills to determine possible groundwater contamination.

Measurable Goals

1. SMS staff will make spot inspections and audits of the transfer stations at least once per year and report findings to EPA in the MS4 Annual Report starting 2012.
2. When requested by the EHD, the DMD Stormwater Management Section will provide surface water monitoring to fill the need for special data for any of the closed landfills.

1.1.6. PROGRAM TO REDUCE POLLUTANTS IN DISCHARGES FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, PARTICULARLY CONCERNING THE APPLICATION OF PESTICIDES AND FERTILIZERS

The New Mexico Department of Agriculture (NMDA), Bureau of Pesticide Management, provides regulations, training, licensing and certification of pesticide applicators and distributors in the State of New Mexico. COA and AMAFCA do not provide regulation or enforcement. The regulation provided by the State of New Mexico, under the New Mexico Pesticide Control Act, applies to commercial applicators and retail distributors. The NMDA, by cooperative agreement with EPA, also enforces provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) within New Mexico and provides response to public complaints from both the agricultural and urban sectors. It is the policy and practice of all COA departments using PHFs to comply with the provisions of FIFRA and the NMDA.

Drinking water in the City once came 100% from the aquifers underlying the City. However, the WUA has been slowly converting our water distribution system to one that currently relies around 70% on surface water from the Rio Grande. This water has been diverted from the San Juan and Chama River watersheds and hopes to reverse an unsustainable use of the aquifer. This change has had a positive effect on the citizens in that there is increased awareness of water quality. Citizens now know where most of their water comes from and where all of it goes when it rains. One of the more effective WUA outreach programs in the Water Conservation Office program has been the use of a local radio gardening program called "New Mexico Garden Talk." This radio program, which airs every other Saturday during the growing season, has been very effective in promoting the wise use of pesticides, herbicides and fertilizers in the Albuquerque Metro Area by combining strategic technical inputs from the WUA, COA and the NM Agricultural Extension Service.

The COA EHD operates a Household Hazardous Waste Program for collection and disposal of household hazardous waste, which includes pesticides, herbicides and fertilizers. This service is provided by the COA to the residential community and provides incentive for proper disposal of chemical products. The COA charges no fee for product drop-off, and supports the program through a monthly surcharge on refuse collection bills. The City's public education program provides for periodic announcements of the

availability of the household hazardous waste disposal locations, usually by mail out of informational brochures in water and sewer billing. The EHD has also recently passed a new City Ordinance providing for public notice prior to the application of certain pesticides within the COA.

AMAFCA utilizes herbicides on a limited basis for partial vegetation control in the maintenance of flood control facilities. All applicators are trained and licensed by NMDA.

The following is a summary of the various COA departments that utilize pesticides, herbicides, or fertilizers and actions taken to promote their wise use:

a. The COA Parks and Recreation Department, Maintenance Division, uses non-restricted pesticides and herbicides in limited quantities for pest and vegetation control. Applicators are trained and licensed by NMDA to assure proper control in the use of these chemicals. The Parks and Recreation Department also uses fertilizers on turf areas for lawn maintenance. An ongoing and citywide water conservation effort has significantly reduced the amount of public turf area that requires summer time irrigation. Since 2004, a program to apply xeriscape designs utilizing native plants in street median areas and converting spray irrigation to drip systems has further reduced the need for chemicals. It is anticipated that future use of the fertilizers will be restricted primarily to turf areas associated with golf courses and recreational parks.

b. The Clean Cities Division of the SWMD utilizes herbicides on a limited basis for partial vegetation control. All applicators are trained and licensed by NMDA. The Clean Cities Division is investigating the use of mechanical methods to control vegetation to further minimize the use of chemicals.

c. The COA EHD operates a Bio-Disease Management Program that utilizes various insecticides at various times of the year. The most common use of insecticide is for control of mosquitoes in residential and agricultural areas. In lieu of insecticides, the department also utilizes gambusia minnows for mosquito larvae control in riparian areas. These minnows are raised by the EHD staff and are used in riparian areas wherever possible. All COA EHD applicators are licensed by the NMDA.

d. The WUA Water Conservation Office has developed and implemented a xeriscape program that encourages the conversion of existing irrigated turf areas to native xeriscape. This program includes water bill rebates of $1.00 per square foot for both residential and commercial areas that convert to xeriscape. The Water Conservation Office has also published educational materials and posted items on their website (www.abcwua.org) emphasizing the correct use of fertilizers in landscape installations. In addition, the COA Planning Department has also implemented guidelines that limit the percent of irrigated turf area permitted in new developments. All of these items have had a positive effect in reducing pesticide, herbicide and fertilizers used in the MS4 area.

Measurable Goals

1. Support the on-going efforts of the Water Conservation Office in educating and advising the public on the proper use and application of pesticides, herbicides and fertilizers to minimize pollutants in stormwater runoff.
2. Continue the existing Household Hazardous Waste Collection Program, and expand the program as funding becomes available.
3. By the MS4 Annual Report for 2012, report on specific operations relating to all City uses of Pesticides, Herbicides and Fertilizers.

1.2. METHODS TO DETECT AND REMOVE ILLICIT DISCHARGES AND DISPOSALS INTO THE STORM SEWER SYSTEM

1.2.1. PROGRAM TO IMPLEMENT AND ENFORCE ORDINANCES TO PREVENT ILLICIT DISCHARGES. INCLUDE A DESCRIPTION OF PERMITTED NON-STORMWATER DISCHARGES THAT ARE CONSIDERED NON-POLLUTING SOURCES

Enforcement of applicable Ordinances is provided by several COA Departments including the Code Enforcement Division of the Planning Department, the Albuquerque Fire Department, and the COA Environmental Health Department. Enforcement is carried out on all portions of the storm drainage system, including the COA-maintained system and the AMAFCA-maintained system.

Complaints regarding illicit stormwater discharge are usually directed via the City's Citizen Contact Center or "311" operators to the appropriate sections of the Stormwater Management Section of the Engineering Division or the Storm Drainage Maintenance Division of the Department of Municipal Development (DMD). Complaint investigations are directed to the various departments for follow-up enforcement. This system receives citizen complaints and reports of storm drainage problems and observations of storm water pollution problems including illicit discharges.

The Albuquerque Bernalillo County Water Utility Authority (WUA) operates a program for permitting and controlling the discharge of industrial wastewater. Citizen calls for suspected and/or observed discharges to surface water systems of waste and/or waste water that should be discharged to the sanitary sewer are directed to the Water Dispatch number (505) 842-9287. This number is on the WUA's website. Illicit discharges are enforced by the Industrial Wastewater Inspection Division. The Industrial Wastewater Division also operates a program called the Pollution Prevention Program to provide industries and commercial businesses with information and assistance in Waste Minimization. This program reduces the amount of potential illicit and illegal dumping that may intentionally or inadvertently occur at industrial and commercial facilities.

The ABCWUA operates the drinking water distribution and sanitary sewer collection system in the Albuquerque area for both city and county residents. The City forces work closely with the employees and staff of WUA in solving common problems. The WUA also operates a wastewater treatment plant called the Southside Water Reclamation Plant and located at 4201 2nd St. SW; Albuquerque, NM 87105. The operations of the collection system and the wastewater treatment system are under a separate NPDES Permit (Number NM0022250). Website information is: www.abcwua.org

The COA Stormwater Management Section works closely with the Fire Department and the EHD to correct illicit discharge problems as they arise. The EHD operates a division for on-site control of hazardous waste materials. This Hazardous Materials Division provides assistance to industrial and commercial businesses to insure compliance with current regulations on storage and disposal of hazardous materials, and to provide assistance in reducing volumes of storage of such materials on-site. The Fire Department operates a hazardous materials response team and is in a continual training effort to upgrade the number of personnel trained in hazardous material response and clean-up. The Fire Department currently has approximately one hundred people (100) trained in hazardous material response, and is fully equipped to respond to accidental or intentional discharges of all hazardous type materials. Since the Fire Department is equipped with proper training, manpower, and equipment, the DMD utilizes the Fire Department and hazardous material response team in most cases of response to observed problems or complaints regarding illicit discharge of hazardous or potentially hazardous materials. The Engineering Division follows up on incidents after the fact.

The City's EHD also operates a Household Hazardous Waste (HHW) Facility operated by a contractor (Rinchem) which will accept HHW free for any citizen of the City with no questions asked. This service is not provided for commercial enterprises and usually involves small quantities of materials. However,

over the course of each year, tons of pollutants are prevented from being placed in storm drainage inlets around town. The location of this facility is centrally located at 6133 Edith Blvd NE north of Montano Blvd. The hotline is (505) 349-5220 and it is open M-W-F from 8:30 AM to 4:30 PM and on Saturday from 8 AM to 3 PM. Website information is http://www.cabq.gov/envhealth/householdwaste.html

Allowable non-stormwater discharges

The COA allows the following uncontaminated stormwater discharges to the municipal separate storm sewer system and reserves the right to review and prohibit such discharges if shown to be a source of stormwater pollution;

a. Water line flushing

b. Landscape Irrigation

c. Diverted Stream Flows

d. Rising Ground Waters

e. Uncontaminated Ground Water Infiltration to the Storm Sewer

f. Uncontaminated Pumped Ground Water Discharges from Potable Water Sources

g. Foundation Drains

h. Air-conditioning Condensate

i. Irrigation Water

j. Springs

k. Water From Crawl Space Pumps

l. Footing Drains

m. Lawn Watering

n. Individual Residential Car Washing

o. Flows from Riparian Habitats and Wetlands

p. Dechlorinated Swimming Pool Discharge

q. Street Flushing Wash Water

r. External Surface Wash Water Providing Cleaning Chemicals Are Not Used

s. Fire Hydrant Flushing

Highly chlorinated waters associated with disinfection of newly constructed water-lines and other water facilities are not discharged to the storm sewer system. These types of discharges however, will be reviewed on a case-by-case basis and may be allowed provided that the water is dechlorinated prior to entering any receiving waters.

Measurable Goals

1. Utilize the City's Citizen Contact Center where citizens can call 311 to report any item of concern. This program has been excellent in providing thousands of "inspectors" to alert the

city of problems. All 311 complaints are documented, inspected by qualified individuals from the SMS and the responses also documented as to the solutions.

2. Continue with work cooperatively with WUA Pollution Prevention Program personnel to ensure industrial materials are properly discharged into the sewer collection system after being pre-treated. The WUA operate a division of inspectors specifically dedicated to this issue.

3. Work with the City's Fire Department on responses to hazardous material spills. Determine the best way to prevent those spills from entering the Rio Grande. Provide system maps as required to help determine the most effective method to contain the spill.

4. Consider a Stormwater Quality Ordinance that will define the problem and create a system of escalating penalties for non-compliance. By the end of 2012, present to City Council for approval.

5. Continue current efforts to provide public information on the available recycling facilities for petroleum products. This will be accomplished by free public service announcements, brochures, and other public education materials as defined in the overall public education program. The concentration in this program will be on the recycling of motor vehicle fuel, motor vehicle waste oil products and anti-freeze.

6. Send out mailings every two years to all companies having a Standard Industry Code listed in the Clean Water Act to alert them to the requirement for filing a Multi-Sector General Permit. Assist businessmen by answering questions or visiting their place of business if requested. Use the Harris Business Database for this data. Document all contacts for reporting to EPA in the Annual Report.

As part of the original Part I NPDES Stormwater Permit Application, the COA conducted a dry weather field screening of the entire storm drainage system in the Albuquerque area. Since that time, system screening has been accomplished by both the COA Storm Drainage Division and AMAFCA based on complaints, and/or as part of normal field inspections for storm drainage improvements or maintenance activities. Because of the arid conditions and sporadic rainfall encountered in the Albuquerque MS4, and since the rainfall events rarely last more than a few hours, the COA and AMAFCA have combined the wet and dry weather screening mentioned in the EPA MS4 Permit to one, singular, year-round system screening process.

As outlined in the original MS4 application, the significant reasons for a screening program is to identify contamination due to cross-connections with sanitary sewers, identify possible sources of illicit discharges into the MS4 system, and to identify major sources of E coli and floatable material entering the storm drainage system.

Dry weather screening will continue to be used to identify possible sources non-stormwater discharges into the MS4 and the existence of any possible cross-connections with the sanitary sewer system.

Dry Weather Sampling Methods and Procedures

Each sampling point will be sampled and field tested following the "Field Screening Sample Log" in Appendix A. Screening will emphasize field observations and field testing of observed flow rate, turbidity, pH, total conductance, dissolved oxygen and visible gross pollutants. Suspicious flows will be traced to their origin and additional tests may be used to confirm the source of the observed flow and/or suspected pollutants.

Selected Critical Monitoring Points

In keeping with the above mentioned purposes and considering the extent of the stormwater quality monitoring program already in place, the following locations are planned to be used in the Albuquerque MS4 system:

- San Jose Drain @ Woodward
- Broadway Pond Inflow Channel
- Menual Pond Inflow Channel (Representative of NMDOT inflow)
- Barelas Pumping Plant Inflow
- Kirtland Channel @ South Diversion Channel
- San Antonio Arroyo @ USGS gage
- Calabacillas Arroyo @ Rio Grande
- Hahn Arroyo @ Carlisle
- Embudo Arroyo @ Pennsylvania
- Highlands System Outfall @ UNMH (Representative of UNM Inflow)
- Bear Canyon Arroyo @ North Diversion Channel
- South Pino Arroyo @ Washington
- North Pino Arroyo @ North Diversion Channel
- South Domingo Baca Arroyo @ Washington
- Amole del Norte Channel @ Blake Rd.
- West Bluff Outfall @ Rio Grande
- Snow Vista Arroyo @ Sage Rd.

Annual Commitments and Means of Calculating Percent Screening

Each of the above mentioned monitoring points will be screened at least once a year and sampled at least once every other year. Percent of system sampled will be calculated by dividing the number of sites sampled per year by the total number of screening sites.

Measurable Goals

1. The COA and AMAFCA will continue its partnership efforts with the WUA's Water Conservation Program to reduce potable water return flows to the storm sewer system.
2. Continue to observe and sample dry weather sites for non-storm discharges. Report on lab results in Annual Report.

1.2.2. PROCEDURES TO INVESTIGATE PORTIONS OF THE STORM SEWER SYSTEM THAT INDICATE POTENTIAL/FOR CONTAINING ILLICIT DISCHARGE OR OTHER SOURCES OF NON-STORMWATER

Investigation of suspected or known illicit discharges to the stormwater system will be accomplished by one of the following available enforcement and inspection programs.

a. Ground Water Protection Policy and Action Plan, enforces illicit discharge for liquids and other illicit materials that are deposited on private property or other open land areas where such discharge may impact either surface or ground water. This is an ongoing program operated by the COA, Water Utility Authority.

b. WUA Water Conservation Program provides inspection and enforcement for all cases of wasted water in private property and public Rights-of-Way.

c. WUA Industrial Wastewater Pre-treatment Division provides field inspection and enforcement for illicit discharge of wastewater and notifies SMS if necessary.

d. The COA EHD Hazardous Materials Division provides enforcement for improper disposal of hazardous materials.

e. COA, Planning Department, Code Enforcement Division, provides inspection and enforcement for improper disposal of wastewater and/or enforcement of correction procedures for plumbing problems associated with illicit discharge when notified through the 311 system.

f. The DMD Storm Drainage Maintenance Division and the SMS provides inspection services for suspected illicit discharge and source determination thereof, and follow-up enforcement to correct suspected illicit discharges when notified of a potential violation by 311.

As field screening is conducted by the SMS and AMAFCA, indications of illicit discharge will be investigated and will be reflected to the proper City agency for follow-up enforcement depending upon the nature of the discharge. If required as part of the investigation, the SMS has the ability to perform dye tests, smoke tests, and to obtain TV investigation of underground storm sewers to trace and determine any source of illicit discharge. As necessary, the WUA Water Quality Laboratory can be used to analyze water to help make a source determination of suspicious discharges.

The SMS performed an intensive $200,000 study in 1999 of the storm sewer system in the older portions of the City. This study concentrated on the east valley area adjacent to the Rio Grande and extended from the north city limit to the south city limit east of the river. The total study area was approximately eighteen square miles. The intent of the study was to investigate the mapping of the existing storm sewer system, to correct mapping where deficiencies occurred and to provide a database on the condition of the existing system to determine future needs for system rehabilitation. Prior to the study, initial system inspection and dry weather screening produced data indicating that this older portion of the storm sewer system was the area of the system that is most likely to contain illegal sanitary sewer connections. Data was also accumulated on any portion of the system that indicated past illicit discharge to inlets or manholes that may have occurred from adjacent industrial or commercial businesses. The few encountered cross-connections from sanitary to storm sewer were corrected as a result of the study.

Measurable Goals

1. Continue the above mentioned program to prevent the discharge of pollutants from sanitary sewers into the MS4. The program shall include:

b. The on-site Fire Chief notifies the EHD hazardous material personnel to report to the scene and advise as to appropriate clean-up methods. Environmental Health personnel advise appropriate other agencies as may have a concern with clean-up procedures. The SMS has requested notification for any spills that may involve surface water, drainage systems, or street gutter drains where spilled material may enter storm drainage systems.

c. The Fire Department may request DMD assistance to provide any necessary equipment or materials needed to contain and absorb spilled material. Such material may include liquid absorbents, sand and soil material, or other material needed to contain and absorb the spilled liquid.

d. The DMD provides assistance removing absorbent materials by trucks, loaders, and street sweeping for final clean-up. These materials are disposed at appropriate locations for the particular spilled material.

e. The use of water for wash down of spill areas is limited to the minimum amount necessary for final clean-up to prevent additional contaminants from being washed into the storm sewer system. The Fire Department emergency response teams carry special bio-remediation products on response vehicles for application on final clean-up on pavement areas where small amounts of residue may still exist. These microorganisms are generally used on petroleum type spill areas to aid in the break down of any residue material.

Measurable Goals

The existing program for spill response and clean-up will continue throughout the term of the permit.

1.2.4. PROGRAM TO PROMOTE, PUBLICIZE AND FACILITATE PUBLIC REPORTING OF ILLICIT DISCHARGING TO THE STORMWATER SYSTEM

The COA has established the Citizen Contact Center ("311") to allow citizens to report incidences of illegal dumping or illicit discharge to the storm drainage system. While this system is only open during working hours, citizens can also use 242-COPS which is a 24-hour line monitored by the Albuquerque Police Department for non-emergencies.

The COA has used various methods of advertising to inform the public on the concerns of stormwater pollution, and to increase the awareness of storm drainage systems and surface runoff. The COA Media Resources Department operates a local government access channel (GOVTV) intended for pubic information on all phases of local government operations and programs. This channel is available on cable TV throughout the Albuquerque area. The DMD Public Information Officer and the SMS have used this medium to tape multiple video productions describing the problems associated with stormwater runoff and stormwater pollution. Information presented also includes a brief description of the EPA NPDES stormwater permitting regulations, information on types of industries that are required to obtain permits, and general information on the types of problems associated with stormwater pollution. These videos are played over and over and reach a large, local audience.

Through the Middle Rio Grande Stormwater Quality Team an educational video was produced for local television stations and public meetings by Cooney Watson marketing firm. It is professionally produced and introduces the public to the issue of stormwater quality and what each citizen can do to help. This video has been played at many public meetings and is available for viewing at the MRGSQT's website, www.keeptheriogrand.org

Other means of public information that have been used include pony panel advertising, bus panel advertising on the public transit buses, and mail out brochures that specifically address the concerns of

- Municipal controls used to address seepage from malfunctioning septic systems and on-site water systems into the storm sewer system.
- Procedures to track and eliminate sanitary sewer overflow and exfiltration of wastewater into the MS4.
- Continue working with the WUA looking for potential cross connections between their wastewater and the MS4.
- Procedures describing how findings from inspections are passed on to storm sewer maintenance personnel; how repairs of damaged sanitary lines are prioritized; and how sources are eliminated.

1.2.3. PROCEDURES TO PREVENT, CONTAIN AND RESPOND TO SPILLS THAT MAY DISCHARGE INTO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM

The primary response agency for spills of any toxic materials is the Hazardous Material (HAZMAT) response team of the Albuquerque Fire Department. The COA has two primary response teams, one located in the northeast section of the city, the other located in the southwest area of the city. Emergency response is concerned with the immediate containment, control and clean-up of hazardous material spills. The Fire Department acts as the primary response agency and the coordinator of the clean-up effort.

The Albuquerque Fire Department is actively involved in training on a continuous basis and has nine qualified trainers on staff. There are approximately one-hundred personnel involved in the program of which approximately 50 percent are certified by the State as Level 3 qualified. The remainder of the personnel varies in training from Occupational Safety and Health Administration (OSHA) technician rating to OSHA specialist rating.

The COA EHD provides assistance in hazardous materials spills and spill control. They also provide assistance to industries and to commercial businesses for proper storage and handling of hazardous materials. The EHD coordinates all spill clean-up efforts with the Albuquerque Fire Department, and other fire response agencies serving the greater Albuquerque area.

The DMD assists as necessary to provide support for clean-up efforts. This assistance is furnished primarily by the Street Department, Street Maintenance Division, and may involve personnel, equipment, and materials necessary to perform the clean-up operation. As may become necessary, the DMD maintains an on-call contractor (currently Rinchem) available for removal and disposal of hazardous materials. This is usually the same contractor that provides material handling and disposal for the EHD Household Hazardous Waste Program. The DMD also has an on-call contractor for collection and disposal of material spills, in particular petroleum type materials such as diesel fuel, waste oil, and other petroleum products.

The New Mexico Environment Department also provides some response on emergency spills. The NMED effort is concentrated on coordination of clean-up and reporting quantity for reportable spills. This State Agency also provides local agencies with assistance with proper procedures of handling of hazardous materials in spill cleanup, and may provide assistance in follow up enforcement as necessary.

The specific procedures for response to reported spills and for protection of the storm drainage system is as follows:

a. The Albuquerque Fire Department HAZMAT response team is notified of the spill and initiates a response team to the site. The first objective of the response is containment of the spilled liquid and assessment of material type and appropriate clean-up.

The COA EHD has been active in the Household Hazardous Waste Program for a number of years. As part of the overall educational efforts by the COA SMS, brochures on the Household Hazardous Waste Program as well as the recycling efforts of the SWMD are included in general material that is available for additional public education information.

The co-permittees of the Albuquerque Phase I MS4 have joined forces with six other agencies in the Middle Rio Grande watershed to form the Middle Rio Grande Stormwater Quality Team. The SQT has developed a consolidated public outreach and education program with an emphasis on the reduction of trash and fecal coliform in the Middle Rio Grande Watershed. Each participating party funds a consultant who develops an advertising campaign and assists the cooperating parties in the management and execution of the campaign. Prior to 2011, the agency contribution was $10,000 annually. For 2012, Albuquerque upped their contribution to $20,000. The participating parties are:

- COA
- AMAFCA
- UNM
- NMDOT
- SSCAFCA (Southern Sandoval County Arroyo Flood Control Authority)
- Ciudad Soil and Water Conservation District
- Bernalillo County

Measurable Goals

1. The COA and AMAFCA, in conjunction with the SQT, will continue their current efforts in providing public education on stormwater systems and stormwater pollution throughout the term of the permit.

1.2.5. CONTROLS TO LIMIT INFILTRATION OF SEEPAGE FROM SANITARY SEWERS TO THE MUNICIPAL STORM SEWER SYSTEM

The COA Wastewater Utility Division performed a massive infiltration/inflow study of the entire city sanitary sewer system in 1976, which indicated that the Albuquerque system was sufficiently new that infiltration and inflow was not a significant problem. As described in Section 4.3.3, the COA completed, in 1999, a newer study of the older areas of storm sewers in an eighteen square mile area of the Albuquerque East Valley Area, which encompasses the low lying areas east of the Rio Grande from the north city limits to the south city limits. This effort provided a review of the current facility maps, correction of errors on the facility map for final input into the Albuquerque Geographic Information System and determined locations and extent of any possible cross-connections between the sanitary sewer and the storm sewer. Because of the small amount of suspected cross connections found, no further investigations by dye testing, smoke or TV inspections were needed. All corrective actions were taken to investigate and correct the possible cross-connections. There are no combined storm-sanitary sewer systems in the city.

Currently, the sewer collection system is managed by an agency separate from the City called the Water Utility Authority. The relationships and cooperation which existed between the old Water Utility Department and the SMS continue with this new agency. The SMS and WUA continue to be vigilante about potential cross connections and immediately take action when the rare one is discovered.

common problems associates with stormwater pollution. Advertising efforts to date are further described in Section 3.2.6.

The COA has also utilized Boy Scouts and Youth Development, Inc. (YDI) Program to mark storm drainage inlets with the following logo - "No Dumping-Drains to River." This inlet marking program was conducted over a period of several weeks in the summer for two years, and resulted in marking a total of approximately two thousand (2000) inlets throughout the city. Inlet marking continues on a very limited basis due to the limited manpower available and is concentrated on inlet locations where the city has received reports of possible illicit discharge, or suspects that illicit discharge has occurred in the past. Inlet markers are also installed as a part of all new construction activities in the city.

Measurable Goals

1. The COA will continue the 311 system throughout the permit term.
2. The COA will continue the inlet marking program on inlets that are identified as potential inlets for illicit discharge. The COA will utilize information received from public complaints, periodic system inspections, information received from field screening and information received from periodic maintenance inspections to identify inlets for marking. This effort will continue throughout the term of the permit.
3. COA will continue to mark new inlets as construction activities continue. Educational activities and public services to be conducted by the municipality to assist in management of the system

As partly described in Section 3.2.5, the COA has conducted various programs to improve the public's knowledge of stormwater and problems associated with stormwater pollution. The following types of educational and public information efforts have been utilized for public information purposes.

a. Pony Panel commercial advertising billboards.

b. Bus panel advertising on public transportation transit buses.

c. Pencils, flyers, Frisbees, and magnets for hand out at special events.

d. A teacher's educational packet entitled "Kids for Clean, Water," which contains educational materials designated for grades one to three.

e. Financial support through the MRGSQT of the "River Xchange" educational program that teaches 6th graders about watersheds and the importance of stormwater quality and their personal responsibilities.

f. Public Educational brochures.

g. Letter mail out to specific industries and businesses exhibiting potential for stormwater pollution.

The COA SMS staff will participate in many events to increase public awareness on concerns of stormwater pollution. Primary events are the ALBUQUERQUE CHILDREN'S FESTIVAL, which is a three-day event held annually at the Albuquerque Convention Center. Available at events are hand out material including flyers, magnets, pencils and general brochures, as well as typical demonstration material such as examples of stormwater, and typical solid waste material that is typically found in inlets and storm drainage systems. The Storm Drainage Division has also operated a booth in cooperation with the US Geological Survey (USGS) and the Wasted Water Division of the Water Utilities Department which included demonstrations of ground water migration as well as the general stormwater demonstration equipment and handouts.

The WUA has an annual program to rehabilitate existing sanitary sewer system manholes and lines. The annual investment in rehabilitation projects is approximately $5.5 million dollars on trunk line rehabilitation, and approximately $2.5 million dollars on smaller diameter collection lines. The WUA operates a fully equipped Maintenance Division, including a television inspection operation. This television pipe inspection system has been loaned to the City for inspections of areas suspected of cross connections.

The WUA continues to use the COA Standard Specifications for specific pipe materials for sanitary sewer construction. Current specifications require trunk line installations utilizing tight gasketed pipe to prevent leakage or infiltration. Small diameter sanitary sewers are required to be constructed with PVC plastic pipe. Vitrified Clay Pipe is no longer used as it deteriorates and allows infiltration over time. The specifications require air tests to identify any pipe leakage prior to acceptance of new construction pipe or lining.

Measurable Goals

1. The COA and WUA will continue current efforts in identifying infiltration inflow and to reduce the amount of infiltration into the storm drainage system.
2. The quality of construction of new installations continues to be managed through the adopted specifications for Public Works Construction.
3. Current programs will be continued throughout the permit term.

1.3. PROCEDURES TO MONITOR AND CONTROL POLLUTANTS FROM INDUSTRIAL AND HIGH RISK FACILITIES

1.3.1. UPDATED LIST OF INDUSTRIAL AND HIGH RISK STORMWATER SOURCES DISCHARGING TO THE MS4

Table 1 in Appendix B is a listing of facilities in the Albuquerque area that may need an Multi-Sector General Permit according to their respective Standard Industry Classification Code (SICC). These codes may also indicate companies that specialize in particular types of hazardous waste products. There are no hazardous waste treatment or hazardous waste disposal sites within the municipal limits of the COA.

Companies that deal with the collection and recovery of hazardous waste materials are required to obtain permits from the New Mexico Environment Department, Hazardous Materials Division for operation and the facility.

The Albuquerque Fire Department is the primary agency responsible for inspecting facilities that deal with hazardous materials and the facilities subject to Section 313 of SARA TITLE III. In 1993 the COA adopted the 1991 Addition of the Uniform Fire Code that furnishes the regulatory authority for any business utilizing hazardous type materials. By requiring industries to conform to the requirements of the Uniform Fire Code, the COA has adopted standards for hazardous materials that are more restrictive than the requirements contained in Section 313 of SARA Title III.

The COA currently utilizes a computerized database listing of all the businesses in the Albuquerque area, which includes SICC information. This listing is from the Harris Company and is purchased every other year by the Albuquerque Geographical Information System personnel every two years.

The Albuquerque Fire Department is currently Providing site inspection and Fire Code certification of facilities described in 40 CFR 122.26(d)(2)(IV)(C). The requirements for businesses that deal with hazardous materials apply to existing facilities as well as proposed new facilities. Prior to the installation

of the new facility, businesses must apply to the Fire Marshal for permit coverage prior to issuance of building permits.

Priorities for inspection of existing facilities have not been established by the Fire Department. The inspections are currently being performed for facilities that have been referred to the Fire Department either by citizen complaint, business complaint, or referrals from other agencies for facility inspection. Presently there are two Fire Department inspectors in the Fire Prevention Bureau are performing inspections in the field. DMD Maintenance has one person who works directly with the lieutenant in charge of the inspection program and with the Fire Prevention Bureau. This provides the means of direct coordination between the DMD and the Fire Department for addressing concerns of ground water contamination and surface water pollution and provides a direct communication for utilization and future development of the business database in Albuquerque.

1.3.2. DESCRIBE A MONITORING PROGRAM FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL FACILITIES

The COA is currently monitoring stormwater runoff in accordance with Section 3. The current monitoring program provides data on a watershed basis, and assures the City a method of monitoring the efficiency of implementation of BMPs and, industrial permitting. Specific monitoring of industries is accomplished by visual inspection only, as part of the Inspection Program by the Fire Prevention Bureau for compliance with the Uniform Fire Code as previously described.

The COA will continue efforts in visual monitoring of permitted industries, and the monitoring program as described in Section 3. The COA will also concentrate on monitoring industries for NPDES MSGP compliance on a continuing basis. As pollution problems caused by industrial facilities are identified, the COA will concentrate inspection efforts on those industries as deemed necessary for satisfactory site control, monitoring in accordance with the guidelines of the multi-sector general permit may necessarily be implemented.

An updated list of industrial stormwater dischargers is periodically downloaded by the SMS from the EPA NOI website to be used as possible sources of stormwater discharge monitoring and/or site visits by the COA.

1.4. PROCEDURES FOR MONITORING AND CONTROLLING STORMWATER POLLUTION FROM MUNICIPAL FACILITIES

1.4.1. DEVELOP AND IMPLEMENT OPERATION AND MAINTENANCE PROGRAM FOR REDUCING STORMWATER POLLUTION FROM MUNICIPAL FACILITIES

The COA has numerous municipal facilities that, if left unchecked, could contribute to stormwater pollution. In 2010, there was a city-wide effort to improve this program. All twelve city department heads attended a kick-off meeting with the Chief Administrative Officer. A goal was set to have all twelve departments prepare operational SWPPPs for all municipal sites. The total number of sites to be covered exceeded 400. By early 2011, over 80% of the sites have SWPPPs including employee training.

The following is a list of the major municipal facilities and their current stormwater pollution control status:

- SWMD Fleet Maintenance Facility – This facility received a complete revision of its stormwater pollution control system in 2002. This revision was necessary to reduce possible stormwater pollution from hydraulic and motor oil leaks from compactor trucks. This facility has a SWPPP and structural BMPs are ion place.

- Pino Yards Fleet Maintenance Facility – This location is almost 100% impervious and needs a major retrofit. That was delayed for budgetary reasons. In 2012, a design firm has been retained to produce a retrofit project for the site that will convert it to an LID facility. All runoff from this site is captured in a fully-lined detention pond with an oil-water separator.
- Yale Bus Maintenance Facility – A renewed SWPPP is being prepared for this facility in 2012 along with construction changes that will capture pollutants and reduce overall runoff. That construction project should be complete by the end of 2012.
- COA-owned parking facilities – The majority of COA-owned parking facilities are covered or underground facilities where stormwater pollution prevention includes daily mechanical surface sweeping and the daily use of dry absorbents for oil spill control. A retrofit of a city lot across from city hall was completed in 2010 which directs runoff from this facility into landscaped areas.
- Solid Waste Transfer Stations – The COA has three solid waste transfer stations located at strategic areas throughout the city. All of these facilities are completely enclosed.
- Albuquerque Airports (Sunport and Double Eagle II) – Stormwater pollution control at these facilities is governed by a separate EPA stormwater permit for the COA Aviation Department and managed by a consultant.
- Isotopes Baseball Stadium – This facility was renovated in 2003.

A detailed map showing the locations of municipal facilities is shown in Appendix A.

AMAFCA has developed a SWPPP for its maintenance yard.

All debris and waste collected from maintenance operations of AMAFCA and COA owned facilities is currently disposed at the COA landfill located west of town and outside the Rio Grande watershed. Sediment collected from the AMAFCA North Diversion Outfall is either sold directly to local contractors or stockpiled at AMAFCA controlled storage facilities pending sale or final disposal of the material.

Measurable Goals

1. Continue to update all SWPPPs for COA buildings and sites.
2. SMS staff to audit all of the above-mentioned SWPPPs for COA facilities and ensure that they include yearly stormwater refresher training.

1.5. PROGRAM TO REDUCE STORMWATER POLLUTION FROM CONSTRUCTION SITES

1.5.1. PROCEDURES FOR SITE PLANNING TO CONTROL WATER QUALITY IMPACTS

The COA Planning Department currently requires approval of site drainage plans prior to construction of site improvements on private developments. Drainage plan requirements and procedures are outlined in the DPM. AMAFCA has similar requirements and guidelines for projects done under their jurisdiction.

In an effort to provide clear, concise and uniform guidelines for the Albuquerque Metropolitan Area, the Albuquerque MS4 permittees and SSCAFCA cooperated in the preparation, revision and distribution of a statewide manual that provides stormwater management guidelines for both construction and industrial activities. This manual was completed in December, 2003 and is in the process of being updated under a contract with the NMDOT. The manual includes templates and guidelines for the preparation of SWPPPs, outlines the regulations for site inspections and documentation and provides guidelines for the selection of BMPs. The manual also clearly outlines the EPA Notice of Intent (NOI) and Notice of Termination (NOT) process, including the use of electronic processing. In addition, a field BMP guidebook for field inspectors exists and is available to the public on the COA website, in hard copy and also on Compact Disc (CD).

During calendar years 2003-2004, over 200 engineers, planners, contractors and government officials were trained in the use of the manual by the MS4 co-permittees.

The COA, as a partner in the MRGSQT, created an expanded stormwater educational website (www.keeptheriograndorg) that provides citizens easy access to a wide range of stormwater pollution prevention resource sites.

Measurable Goals

1. By the end of 2012, COA and AMAFCA will assist the NMDOT in updating and expanding the current Stormwater Management BMP Manual.

1.5.2. PROCEDURES FOR INSPECTING AND ENFORCING CONTROL MEASURES

The COA and AMAFCA currently have construction inspection programs for the inspection of the construction and installation of facilities for the respective agencies. As described in Section 2.5.1 plans for control of erosion and sediment, and site discharge are reviewed and approved through the city's plan review process. The approved plans become part of the construction plan set for future on site inspection during construction. Each grading and drainage plan that exceeds one acre in size is approved in writing by the COA Planning Department. The COA Planning Department also provides written notification to the applicant of the need to prepare a SWPPP for the approved project and conform to the applicable EPA *e*NOI process, before the commencement of construction. All construction contracts funded by the COA or AMAFCA now include a pay item and requirements for the preparation of SWPPPs and the inspection and implementation plan for the construction project.

Inspections in the field are provided by one of the following methods:

a. Inspection is provided by inspectors from the COA Construction, Stormwater, or Code Enforcement Divisions who are assigned to provide the inspection for a particular project. All of these inspectors have been trained in the inspection requirements for the implementation of SWPPPs.

b. Spot check site inspections of stormwater pollution prevention during construction are provided by personnel from the COA SMS, AMAFCA and the Surface Water Quality Bureau of the NM Environment Department. All of these personnel have been trained in the necessary procedures for the implementation and inspection of SWPPPs.

c. The SMS currently reviews, approves and maintains files of SWPPPs and Notices of Intents for the City Capital Improvement Projects and assists contractors and other COA Departments with the development of Stormwater Pollution Prevention Plans for construction activities.

d. Additional inspections are provided in the field by cooperation between the Planning Department, AMAFCA and the DMD.

e. The 311 system is available to allow for citizen complaints of off-site sedimentation problems.

Measurable Goals

1. The COA and AMAFCA will continue to work with organizations to provide seminars for training of association members, particularly the Associated General Contractors and the American Public Works Association. The SMS and AMAFCA will offer staff assistance and special training to such groups, on an as demand basis for this type of seminar training. This effort will be continuous throughout the permit term.

SECTION 2. MONITORING AND REPORTING

The Monitoring and Reporting requirements of the Albuquerque MS4 Stormwater Permit, as outlined in Part V of the permit, are quite detailed. The Albuquerque MS4 co-permittees take a pro-active approach to the monitoring of stormwater quantity and quality and have been operating a comprehensive monitoring program long before the issuance of the recent MS4 permit.

For example, the MS4 co-permittees, in cooperation with the USGS, are currently expending approximately $400,000 per year for the operation of an extensive stormwater quality and quantity monitoring program. This program equals or exceeds the testing protocols listed in the MS4 permit. The USGS began creating analysis tools to identify trends or problem indicators. That work began in 2010 and is expected to be complete in 2012. Once we have those tools, it will be easy to check for outliers in the data received, easily determine trends through graphical means and compare Albuquerque's stormwater stream to other local agencies and the nation.

In addition to the USGS monitoring program, the COA and AMAFCA have a long established network of floatable monitoring points that are used to monitor the changeable content of floatable material produced by each storm event. As per the requirements of Part V of the MS4 permit, the COA and AMAFCA have chosen the Broadway Detention Pond, the North Pino Arroyo Water Quality Pond as the representative floatable monitoring locations. Each of these locations has photo documentation of floatable collections and estimated volumes of collected materials. This information can assist in determining optimal times for maintenance.

To monitor the sources of fecal coliform in stormwater, both the COA and AMAFCA conducted extensive scientific studies, using both Deoxyribonucleic Acid (DNA) and Antibiotic Resistance Analysis (ARA) methods to indicate the sources of fecal coliform in stormwater. The results of these studies have been used to implement public education and source-specific programs to decrease fecal coliform (E Coli) pollution in the entire Middle Rio Grande Watershed area.

Measurable Goals

1. The COA and AMAFCA will continue yearly on-going contracts with USGS to perform stormwater quality and quantity testing.

SECTION 3. FECAL COLIFORM TOTAL MAXIMUM DAILY LOAD

Starting in 2011 with the institution of a revised TMDL from the NMED, bacterial investigations related to impairments in the Rio Grande have shifted from fecal coliform to E Coli. This change has been adjusted in terms of laboratory work and the tests needed for E Coli as opposed to fecal coliform. The MS4 partners are making this change in all future reports starting with 2011. ***Once the EPA approves a revised MS4 permit, the City will adjust this section to the discussion of E Coli.***

As outlined in Table IIIB of the Albuquerque MS4 Permit, The State of New Mexico has included requirements to assist in the implementation of the Middle Rio Grande TMDL for fecal coliform. The Albuquerque MS4 co-permittees have already taken a pro-active approach, prior to the issuance of their MS4 permit, to address the problems of fecal coliform in stormwater.

In 2000, the Middle Rio Grande Water Quality Working Group was formed to act as a water quality consortium to address water quality issues in the Middle Rio Grande Watershed. This Working Group is composed of representatives from state, county, municipal and federal government agencies as well as numerous tribal, environmental and flood control organizations. Coliform contamination abatement of stormwater has been one of the on-going major emphasis items of the Working Group.

As a result of the on-going efforts of the Middle Rio Grande Water Quality Working Group and other recent partnerships with local Phase II MS4 permittees, a coordinated effort for bacterial reduction has been initiated in the Middle Rio Grande Watershed prior to the issuance of the Albuquerque MS4 permit. Because of this on-going program, many of the fecal coliform and E Coli TMDL activities mandated in the Albuquerque MS4 permit have already been addressed prior to the permit being issued and will therefore be summarized in this section of the SWMP.

In June 2002, the COA completed an investigation of the sources of fecal coliform contamination of stormwater using Antibiotic Resistance Analysis. The results of this study are available on the COA website (http://www.nmenv.state.nm.us/swqb/Rio_Grande/Middle/MST/MRG-MSTReport.pdf). It was determined that dog and bird fecal matter is the major source of fecal contamination in stormwater. COA sewer and/or septic system leakage was eliminated as a source of fecal contamination as a result of this study. Fecal coliform readings, by watershed, were also indicated in this study.

In 2003, AMAFCA, NMED and Bernalillo County initiated another investigation of fecal coliform sources that covers additional areas of the Middle Rio Grande Watershed. Results from this study eliminate human fecal matter as a major source of stormwater contamination.

To address the problem of dog fecal matter as a stormwater pollutant, the COA has developed a partnership with Environmental Health, Animal Services, and Open Space. As a result of this partnership, a brochure on the dangers of pet fecal contamination, *Scoop that Poop,* has been produced and is being made available at Animal Shelters when pets are being adopted. In addition, brochures on the need to collect dog waste were given to all local pet stores for free distribution to citizens. Because initial analyses indicated that COA Open Space and Park properties were a major source of dog fecal matter, the Parks and Open Space Divisions have taken a leading role in elevating public awareness of the dangers of pet fecal contamination. They have placed signage and plastic bag dispensers at high pet density locations throughout city owned properties. These efforts have had a positive effect in decreasing the amount of pet fecal matter on city properties.

In an effort to reinforce the efforts of the COA Parks and Open Space, through the SQT, 15-second commercials airing in May and June prior to the rainy season emphasize the need for the public to take responsibility to collect their pet's waste.

Measurable Goals

1. Continue educational and physical efforts to reduce overall bacterial contamination using best available technologies.

SECTION 4. STORMWATER MANAGEMENT PROGRAM RESOURCES

4.1. CITY OF ALBUQUERQUE

The Storm Drainage Division provides funding for the NPDES Stormwater Program through an ongoing project in the Capital Improvement Bond Program. Funding comes from bonds which are voted on by the citizens every other odd year and has increased steadily from 2007 to 2012.

Bond Fiscal Year	NPDES amount	
2007	$187,500	
2009	$250,000	
2011	$600,000	
2013	$700,000	(projected)

In addition, the Storm Drainage Maintenance Division has a yearly budget of $2.6 million for the O&M of storm drainage infrastructure.

The COA SMS currently has two full-time employees dedicated to the NPDES Stormwater Program, with the as-needed part-time design assistance from the Engineering Division. Nine construction inspectors from both the Department of Municipal Development, Storm Drainage Division and the Planning Department Construction Coordination Division are also available if needed for inspections.

4.2. AMAFCA

AMAFCA provides funding for the NPDES Stormwater Program through an ongoing Operating Property Tax Levy. The stormwater program allots approximately $200,000 yearly to the cooperative USGS stormwater monitoring program, $10,000 to SQT public education efforts and $100,000 a year for operation and maintenance of stormwater quality projects. AMAFCA also has allotted $500,000 annually through their Capital Improvement Bond Program for the design and construction of new stormwater quality enhancement projects.

AMAFCA has one full time employee dedicated to the NPDES Stormwater Program.

Measurable Goals

1. By April of each year; The City and AMAFCA will meet with representatives of USGS to develop memorandum of understanding for the up-coming year's stormwater monitoring program.

SECTION 5. RELATIONSHIP BETWEEN CO-PERMITTEES

The co-permittees of the Albuquerque MS4 Stormwater Permit have entered into numerous agreements and partnerships for the implementation of partnered efforts to enhance stormwater. These agreements and partnerships include:

- Cooperative Agreement for Participation in Stormwater Monitoring and Testing
- Memorandum of Understanding to Fund Public Outreach and Education Regarding Stormwater Pollution
- Cooperative Training Sessions for Contractors in the Implementation of Stormwater Pollution Prevention Plans
- Cooperative Agreement for the Preparation of Stormwater Pollution Prevention Manual for Construction and Industrial Activities
- Coordination of Progress and Reporting on MS4 Activities

Measurable Goals

1. The co-permittees will meet to discuss progress on the designated action items of each co-permittee at least quarterly throughout the life of the permit.
2. By December 1 of each year, co-permittees will meet to develop annual EPA progress report.

APPENDIX A

FIGURES/MAPS